

Amendments to the claims

1 - 3. (cancelled)

4. (currently amended)

The apparatus as claimed in **~~claim 3~~ claim 14**, ~~further comprising wherein~~
said apparatus further includes means to introduce makeup water ~~in said~~
into said receptacle.

5. (currently amended)

The apparatus as claimed in **~~claim 3~~ claim 14**, ~~further comprising wherein~~
said apparatus further includes means to recover precipitates from said
receptacle below said hydrogen gas generating region.

6 - 8. (cancelled)

9. (currently amended)

The apparatus as claimed in **~~claim 8~~ claim 16**, ~~wherein further comprising~~
said apparatus further includes means for rotating said ~~screen along a~~
~~horizontal plane~~ screen disc in a horizontal plane.

10. (cancelled)

Amendments to the claims

11. (new)

An apparatus for hydrogenating hydrocarbon fuel, comprising:
a receptacle having a hydrogen gas generating region at a lower inner portion of said receptacle, a hydrocarbon fuel treatment region at an intermediate inner portion of said receptacle and above said hydrogen gas generating region, and a hydrogen gas recovery region at an upper inner portion of said receptacle and above said hydrocarbon fuel treatment region, said lower inner portion of said receptacle containing an aqueous solution;
means for introducing aluminum particles in said hydrogen gas generating region for generating hydrogen gas in said hydrogen gas generating region;
means for recovering hydrogen gas in said hydrogen gas recovery region and for creating a vertical flow of hydrogen gas between said hydrogen gas generating region and said hydrogen gas recovery region; and
means for introducing a hydrocarbon fuel into said receptacle and for circulating said hydrocarbon fuel inside said receptacle along a horizontal flow path in said hydrocarbon fuel treatment region, across said vertical flow of hydrogen gas, and in contact with said hydrogen gas for hydrogenating said hydrocarbon fuel.

12. (new)

The apparatus as claimed in **claim 11**, wherein said means for introducing aluminum particles in said hydrogen gas generating region includes a screen disc mounted in said hydrogen gas generating region for receiving aluminum particles thereon and an aluminum feed tube having one end external to said receptacle and an opposite end located immediately above said screen disc for delivering aluminum particles onto said screen disc.

Amendments to the claims

13. (new)

The apparatus as claimed in **claim 12**, wherein said means for introducing said hydrocarbon fuel into said receptacle is an inlet pipe and means for circulating said hydrocarbon fuel inside said receptacle along a horizontal flow path in said hydrocarbon fuel treatment region includes said inlet pipe and an opposite outlet pipe being horizontally inline with each other and adjacent said hydrocarbon fuel treatment region.

14. (new)

The apparatus as claimed in **claim 13**, wherein said apparatus further includes, in said hydrogen gas generating region, means for maintaining said aqueous solution at a predetermined level above said screen disc, above said opposite end of said aluminum feed tube, and below said inlet and outlet pipes.

15. (new)

The apparatus as claimed in **claim 14**, wherein said means for introducing aluminum particles in said hydrogen gas generating region further includes an aluminum particle hopper mounted above said receptacle and a rotary feeder mounted between said aluminum particle hopper and said aluminum feed tube for feeding aluminum particles into said aluminum feed tube.

16. (new)

The apparatus as claimed in **claim 15**, wherein said apparatus further includes means for circulating said aqueous solution from said hydrogen gas generating region and into an upper external segment of said aluminum feed tube.

17. (new)

The apparatus as claimed in **claim 16**, wherein said means for circulating said aqueous solution includes an external circulation pipe and an external circulation pump between said lower inner portion of said receptacle and said upper external segment of said aluminum feed tube.

18. (new)

The apparatus as claimed in **claim 17**, wherein said aqueous solution contains sodium hydroxide.

19. (new)

The apparatus as claimed in **claim 17**, wherein said apparatus includes means for introducing said aqueous solution into said lower inner portion of said receptacle.